100. A comparison is made in the following statement of the number of the animals licensed for grazing at full and privileged rates during the years 1895-96 and 1896-97 :—

Division.	No. of animals.	
	1895-96.	1896-97.
Sukkur ...	204,478	134,948
Naushahro ...	123,654	128,245
Hyderabad ...	144,923	204,330
Jerruck ...	95,820	109,793
Total ...	568,875	577,316

101. The decrease in Sukkur is due to cattle disease, insufficient fodder in two sub-ranges, and the closure of a larger area than in the year before to browsers. A larger number of animals availed themselves of the grazing within forest limits in the other three divisions than in 1895-96, hence the increase.

(3) *Miscellaneous.*

102. There is nothing special to record under this head.

CHAPTER III.

Gross Yield and Outturn of Forest Produce.

I.—Departmental Operations.

(*a*) *Timber.*

103. A comparative statement showing the outturn of timber extracted by Government agency is given below :—

Outturn of timber.

Year.	Timber in the Rough.		Sawn Timber.		
	Logs.	Poles.	Planks.	Sleepers.	Slabs.
	No.	No.	No.	No.	No.
1895-96	3,101	32,610	2,506	2,040	...
1896-97	153	3,706	...	...	...
Decrease ...	2,948	28,904	2,506	2,040	...

104. In the subjoined table is given an abstract of Form No. 59, which exhibits a detailed account of timber cut and collected by Departmental agency and that brought to Sale Depôts or sold locally .—

Description of Timber.	Balance on 1st July 1896.	Outturn of the year.	Total.	Disposed of during the year.	Balance on 30th June 1897.
Sukkur Division.	No.	No.	No.	No.	No.
Logs	...	151	151	124	27
Poles	...	3,706	3,706	1,352	2,354
Naushahro Division,					
Logs	...	...	...	...	...
Poles	...	...	...	...	...
Hyderabad Division.					
Logs	...	...	...	...	...
Poles	4,141	...	4,141	4,141	...
Jerruck Division.					
Logs	...	2	2	2	...
Poles	...	...	...	...	...

105. There is not much to remark under this head. In the Naushahro, Hyderabad and Jerruck Divisions, no fellings were undertaken departmentally, while in Sukkur the 151 logs and 3,706 poles are the result of so much of the erosion operations as were carried on by Forest subordinates. In Jerruck, the 2 logs are the balance of timber cut and disposed of in 1895-96, but through an oversight they were not brought on to stock returns of that year.

Supply of timber to public departments.

106. The supply of timber, as also of other forest produce, to Government Departments and public bodies by direct Departmental agency having practically ceased, the usual statement of the yearly deliveries to them has been omitted.

(*b*) *Firewood and Charcoal.*

Outturn of firewood.

107. The following statement gives the yield of firewood and charcoal for two years:—

Year.	Firewood.	Loco. fuel.	Charcoal.
	Maunds.	C. ft.	Maunds.
1895-96 ...	80,362	1,979,103	18,892
1896-97 ...	1,178	3,125	...
Decrease ...	79,184	1,975,978	18,892

108. A marked difference is noticeable in the above figures, which has solely resulted from the introduction of the coupe contract system of working the forests, under which contractors are at liberty to have direct dealings with all the Departments of Government, etc., requiring fuel for their consumption, Departmental fellings being only resorted to when failing other arrangements, material has to be cut on eroding banks, canal banks, *bunds* or along boundary paths and compartment lines, or when a special indent from a public department has to be complied with.

(*c*) *Other Minor produce.*

Minor products.

109. The collection and removal of minor forest products are works in which the Department has no direct hand, as the most valuable of them are yearly farmed out.

II.—Removal of Produce by purchasers.

(*a*) *Timber.*

Comparative statement of yield in timber.

110. The quantity of timber cut and removed from the forests by purchasers, other than coupe contractors, during two years is compared below:—

Division.	Timber.		Posts.		Rafters.		Sleepers.		Planks.	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
	C. ft.	C. ft.	No.	No.	No.	No.	No.	No.	No.	No.
Sukkur	1,197	7,355	568	2,390	20,403	15,567	...	...	...	...
Naushahro	2,982	10,838	282	...	23,469	12,939	...	...	...	...
Hyderabad	2,460	5,038	4,825	4,165	70,879	78,315	...	53	1	...
Jerruck	6,399	198	256	...	3,500	4,170	6,815	389	232	...
Total ..	13,038	23,429	5,931	6,555	118,251	110,991	6,815	442	233	...

111. The increase under "Timber" and "Posts" is accounted for by the sale of wood obtained from erosion fellings, which were heretofore carried on by Departmental agency, while under other heads there is a falling off, brought about by the change in the agency of exploitation, as under the coupe system the requirements of villagers along with those of other people were met by the coupe contractors who had purchased the standing crop in the area situated within their reach in the different localities. To obviate inconvenience or hardship that might be felt by the inhabitants of villages in the neighbourhood of forests by the coupe contractors refusing to comply with their requisitions for domestic purposes, or demanding higher rates from them, a clause has been inserted in the coupe agreement which renders it obligatory on contractors to supply them with the required material at rates not in excess of those hitherto charged by the Forest Department.

(*b*) *Firewood and Charcoal.*

Comparative statement of yield in firewood.

112. The following comparative statement exhibits the outturn of firewood and charcoal, exclusive of the quantities extracted by the coupe contractors:—

Division.	Firewood and Charcoal.	Firewood and Charcoal.
	1895-96.	1896-97.
	C. ft.	C. ft.
Sukkur	2,957,574	2,008,512
Naushahro	816,217	476,061
Hyderabad	383,006	573,537
Jerruck	430,968	93,873
Total ...	4,587,765	3,151,983

113. A decrease is noticeable in all the divisions, except in one, and it is mainly due to the outbreak of plague, which, having decimated the population of large towns, such as Shikarpur, Sukkur, Kohri, etc., caused a considerable reduction in the consumption of the two articles so much in request for the daily necessaries of life, and partly to the restrictions imposed by the Deputy Commissioner, Upper Sind Frontier, to the disposal of wood from waste lands in his district, which were subsequently withdrawn on a representation having been made to the Commissioner in Sind. In the Hyderabad Division, the increase is attributed to the inclusion of a large quantity of firewood and charcoal, cut under share system in 1895-96, in the figures of 1896-97, as it was disposed of in the latter year.

Realisations from coupe sales.

114. The subjoined table shows, among other details, the value realised by the sale of the coupes selected for exploitation:—

Division.	Number of Coupes.	Area in acres.	Value realised.	Average price per acre.
			Rs.	Rs. a. p.
Sukkur	96	11,940	56,000	4 11 1
Naushahro	14	3,428	18,000	5 4 0
Hyderabad	47	3,381	62,000	18 5 5
Jerruck	36	1,602	27,248	17 0 2
Total ...	193	20,351	1,63,248	8 0 4

A comparison of these figures shows a decided improvement upon those of the preceding year, recorded under paragraph 115. Although the total area sold during the year is less by six thousand acres, the prices obtained are in excess by more than four thousand rupees. The average price has also risen, notably in Hyderabad and Jerruck. The forests of these divisions contain magnificent babul (*Acacia Arabica*), and it is the babul bearing area mostly that brings in such good returns. This is one of the reasons why special attention is being paid to the regeneration of the area under forest in Sukkur and Naushahro, which in course of time will have improved not only the quality of the growing stock, but the amount of the sustained yield as well.

Realisations from bahan timber.

115. Bahan (*Populus euphratica*) was exploited under the selection method in the Naushahro and Hyderabad Divisions only. The following statement shows the minimum quantity of the different descriptions of this class of timber which the contractors

agreed to extract before the 30th September 1897 from the areas shown in column 4 of the statement given under paragraph 94, together with the stipulated rates and other details :—

Description of timber.	Minimum quantity to be extracted.	Rate per 100.	Quantity removed during the fuel year ending 30th September 1897.	Less quantity extracted.
Hyderabad Division.	No.	Rs. a. p.	No.	No.
Dasas	700	50 0 0	120	580
Posts	12,500	20 0 0	8,686	3,814
Rafters	257,000	7 8 0	133,950	123,050
Do. (thin) ...	96,875	4 0 0	33,700	63,175
Total ...	367,075	...	176,456	190,619
Naushahro Division.				
Dasas	...	...	...	...
Posts	2,000	7 8 0	...	2,000
Rafters	2,000	5 4 0	...	2,000
Do. (thin) ...	5,000	3 0 0	...	5,000
Total ...	9,000	...	...	9,000

116. It will be observed that the quantities removed and paid for during the year fell far short of the expectations entertained. The scare caused by the outbreak of plague and quarantine restrictions hampered the operations of the contractors to such an extent that sufficient labour could not be procured, even on increased wages, and thus the work of extraction was given up by them as a hopeless task. This accounts for the anticipated outturn being so small.

Supply of firewood to public departments.

117. The following statement shows the quantity of wood fuel supplied by coupe contractors to the North-Western Railway and other departments and public bodies, together with the rates charged :—

To whom supplied and at what rate.	Firewood.
	1896-97.
	Maunds.
North-Western Railway (*vide* paragraph 118, below) ...	1,096,815
Commissioner's Steamer "Jhelum" (actual expenses of cutting and delivering).	9,373
Indus Ferry Steamers (Rs. 22 per 100 mds.) ...	50,420
River Conservancy (Rs. 18 per 100 mds.)	2,517
Public Works Department (Rs. 18 and 21 per 100 mds.) ...	700
Commissariat (Rs. 25 per 100 mds. and $10\frac{3}{4}$ annas per 100 lbs.)	50,676
Hyderabad Water Works (Rs. 21 per 100 mds.) ...	30,000
Sukkur Municipality (Rs. 48 per 1,000 c. ft.)	2,369
Hyderabad Jail (Rs. 25 per 100 mds.)	2,400
Government Farm, Hyderabad (Rs. 21 per 100 mds.) ...	1,000
Port Engineer, Karachi (Rs. 30 per 100 mds.)	74,000
Total ...	1,320,270

118. For the loco. fuel delivered at stations on the N. W. Railway, different rates are paid. They were settled with the Manager in the year 1894, and have remained unchanged ever since. For facility of reference, they are shown in the following schedule :—

No.	Name of Station.	Charges for cutting and delivery per 1,000 c. ft.	Royalty per 1,000 c. ft.	Total.
		Rs.	Rs.	Rs.
1	Reti	36	12	48
2	Khairpur	24	12	36
3	Mirpur	24	12	36
4	Sarhad	24	12	36
5	Ghotki	24	12	36
6	Mahesar	24	12	36
7	Pano Akil	24	12	36
8	Sangi	24	12	36
9	Rohri	30	12	42
10	Sukkur	36	12	48
11	Bagarji	26	12	38
12	Ruk	25	12	37
13	Jamra	25	12	37
14	Shikarpur	26	12	38
15	Kot Sultan	24	12	36
16	Humayun	30	12	42
17	Abad	24	12	36
18	Jacobabad	30	12	42
19	Alahdadin	26	12	38
20	Madeji	25	12	37
21	Sehwan	28	12	40
22	Bubak	26	12	38
23	Bhan	26	12	38
24	Khudabad	27	12	39
25	Dadu	36	12	48
26	Phulji	25	12	37
27	Purano Dero	36	12	48
28	Piaro	27	12	39
29	Sita	27	12	39
30	Radhan	36	12	48
31	Badra	25	12	37
32	Naundero	27	12	39
33	Kotri	34 & 36	12	46 & 48
34	Gidu Bandar	36	12	48
35	Budhapur	26	12	38
36	Manjhand	34	12	46
37	Amri	32	12	44
38	Gopang	32	12	44
39	Laki	30 & 32	12	42 & 44

Revenue from the sale of wood under the permit pass system.

119. A comparison of the "Ghat" realisations from the sale of dead wood to retail dealers is exhibited below :—

Division.	Name of Ghat.	Revenue realised.	
		1895-96.	1896-97.
		Rs.	Rs.
Sukkur ...	Rahuja	10,633	6,757
	Jhali		
	Rohri		
	Sadhar	14,531	11,857
	Stewart		
	Khura		
Naushahro ...	Larkana	1,661	2,411
	Garhi Yasin	1,479	1,285
Hyderabad ...	New Fuleli	1,579	1,366
	Old Fuleli		
	Hajipur		
	Matiari	212	328
	Miani	3,152	2,746
Jerruck ...	Khathar	433	339
	Total ...	33,680	27,089

120. The causes which have in the main contributed to a decrease of Rs. 6,591 from this source of revenue have been explained in paragraph 116 in this chapter. It is only two of the out-lying stations (Larkana and Matiari) where "Ghats" are established that show a little increase, resulting from an influx of people into these places at the commencement of the plague, when the quarantine restrictions and segregation rules were not in operation throughout the Province.

(c) Grazing.

Grazing fees.

121. The revenue realised from grazing fees in the different divisions is compared below :—

Division.	1895-96.	1896-97.
	Rs.	Rs.
Sukkur ...	20,958	18,683
Naushahro ...	9,237	9,549
Hyderabad ...	14,331	17,072
Jerruck ...	12,554	13,166
Total ...	57,080	58,470

122. The receipts under this head exceed those of the two previous years by Rs. 9,889 and Rs. 1,390, respectively. The improvement of the year is very satisfactory, notwithstanding the necessity of excluding browsers from a larger area and of carrying out extensive plantation operations, especially in Upper Sind (paragraph 74).

(d) *Other minor Produce.*

Realisations from the sale of farms.

123. The proceeds realised by the disposal of farms for the collection and removal of minor forest produce and the right to fish in forest waters are given below for two years :—

Division.	Babul Pods.		Lac.		Munj and Sur grass, &c.		Fishery.	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sukkur ...	492	583	...	...	976	917	1,537	1,959
Naushahro ...	998	782	...	...	698	870	1,741	1,112
Hyderabad ...	7,953	12,587	7,350	5,410	301	349	1,057	1,045
Jerruck ...	3,245	2,841	367	133	...	...	314	203
Total ...	12,688	16,793	7,717	5,543	1,975	2,136	4,649	4,319

124. A variety of causes was at work affecting adversely or otherwise the sale-proceeds of the minor products as well as their recovery. Under "babul pods," the net increase amounts to Rs. 4,105, which occurs mostly in the Hyderabad Division, in which the sale price of the year was almost the same as that of the one previous ; but an outstanding sum of over three thousand rupees on account of the latter year was recovered and credited in the former. In the Hyderabad Division, the "lac" farm fetched much better prices, but an instalment of Rs. 2,730 had unavoidably to stand over unadjusted, owing to the occurrence of plague, which interfered not a little with its collection and disposal; while in the Jerruck Division, the crop of "lac" having failed, a ridiculously low offer was received, which it was not deemed worth while to accept. The sum of Rs. 133 shown in the year 1896-97 is the amount of the third instalment due on account of the preceding year. The slight increase under "Munj and Sur grass, etc.," needs no remarks, as receipts from them often vary with the demand that exists for them in the localities in which they are produced. Under "fishery," the Sukkur Division shows an increase of Rs. 422, due to the better prices obtained, while the revenue has declined in other divisions, especially in Naushahro, where the falling off was caused by the absence of the keen competition which characterised the sale of the year before.

(e) *Cultivation.*

Area under cereal cultivation.

125. A statement showing the area given out for cereal cultivation within forest limits and the assessment realised therefrom in two years is given below :—

Division.	Area under cultivation.				Amount realised by assessment.			
	Kharif.		Rabi.		Kharif.		Rabi.	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.
Sukkur ...	641	1,358	945	462	1,235	3,945	3,688	2,316
Naushahro ...	229	435	890	973	707	1,258	2,280	1,654
Hyderabad ...	23	20	47	78	86	66	202	236
Jerruck ...	40	602	45	26	229	2,004	71	75
Total ...	933	2,415	1,927	1,539	2,257	7,273	6,241	4,281

126. A larger area under "kharif" is the necessary consequence of the more rapid advancement which is being made towards reclothing the denuded tracts and replacing the rank and stunted growth by more valuable species of trees. In the Kot Sultan Forest alone, 1,153 acres were given out, against 322, in the year before. Under the arrangement in force, 627 acres, a little more than half the area, have been planted with babul and fenced in at the cultivators' expense. Subject to certain modifications to suit the particular localities, etc., a similar system is in operation in other forests, also. The area under "rabi" cultivation has fallen from 4,793 acres in the year 1894-95 to 1,539 in 1896-97, for the reasons that the lands so cultivated in previous years are being taken up by the Department for cultural operations directly they become fit to bear a tree crop, and that fresh grants are confined to depressions and low-lying tracts wherein the water level is still so high in the inundation season as to preclude all possibility of systematic treatment.

127. To calculate the rate per acre from the figures shown in the above statement is by no means a safe course to arrive at the exact rate of assessment charged by the Forest Department, inasmuch as they only exhibit the actual sums realised during the year, while under the terms of agreement executed by cultivators some of the later instalments due on the land let to cultivation in one year do not become payable till the next, and at times some of the revenue remains unadjusted when a year terminates. At the close of the year under report, such sums aggregated Rs. 1,187-7-2. In the year 1895-96. an item of Rs. 424, levied as assessment on "kharif" lands, had not been accounted for by the Divisional Forest Officer, Sukkur, and that year's figure has consequently been altered from Rs. 811 to Rs. 1,235.

III.—Free grants of Forest produce.

Free grants.

128. The usual table showing the money value of the free grants of timber and other forest produce made to agriculturists, cattle-owners living within forest limits, as well as the people of villages in the vicinity of Forest Reserves is given below for two years :—

Division.	1895-96.	1896-97.
	Rs.	Rs.
Sukkur ...	689	1,019
Naushahro ...	287	231
Hyderabad ...	403	197
Jerruck ...	32	85
Total ...	1,411	1,532

129. The figures in the above statement often vary with the vagaries of the river and the number of fires that break out in a year in villages. The larger the number of huts or houses washed away or burnt, the greater is the demand for forest material. It is satisfactory to note that the orders on the subject of free grants, quoted under paragraph 126 of last year's report, were well attended to, and necessary precautions were taken to prevent unnecessary delay to grantees in the cutting and removal of the material sanctioned in their favour.

130. There is yet another advantage which the coupe contract system of working has been the means of affording to Forest population, inasmuch as the coupe agreement provides that the contractor has no claim to the small materials consisting of branches, tooth brushes, shoots or wood of any sort five inches or less in girth at the thickest part, and that he is not to interfere with the villagers who may be permitted by a Forest Officer at any time after the commencement of felling to cut and remove the said small materials for firewood or fencing from the coupes. The area under exploitation being more or less evenly distributed, such material is available in sufficiently large quantities to meet the daily requirements of the people, and is allowed to be removed free of charge without requiring any preliminary formalities to be observed.

IV.—Produce removed by right-holders and under privileges.

Free grazing.

131. The following statement compares the number of cattle which grazed free in the forests of this Circle as well as the value of grazing enjoyed by them :—

Division.	Number of Cattle.		Value of grazing.	
	1895-96.	1896-97.	1895-96.	1896-97.
			Rs.	Rs.
Sukkur ...	18,268	16,264	25,360	21,327
Naushahro ...	8,266	8,329	3,276	3,850
Hyderabad ...	72	58	19	88
Jerruck ...	1,168	1,536	832	2,367
Total ...	27,774	26,187	29,487	27,632

132. The statement prescribed in Government Resolution No. 2872, dated 12th April 1897, at the instance of the Inspector General of Forests is given below :—

Division.	Agency by which material removed.	Material removed.								Total.	Average outturn per square mile of all forests.			
		Timber.		Fuel.		Total Wood.		Minor produce.	Grazing.		Timber and fuel.		Minor produce.	Grazing.
		C. ft.	Value—Rs.	C. ft.	Value—Rs.	C. ft.	Value—Rs.	Value—Rs.	Value—Rs.	Value—Rs.	C. ft.	Value—Rs.	Value—Rs.	Value—Rs
Sukkur ...	Government ...	1,623	524	45,819	619	47,442	1,143	198	...	1,341				
	Purchasers ...	1,23,790	13,535	70,90,221	66,250	72,14,011	79,785	1,957	18,683	1,00,425				
	Free grants ...	6,729	950	1,148	12	7,877	962	57	...	1,019				
	Right holders ...	...	...	...	...	...	...	...	21,327	21,327				
	Total ...	1,32,142	15,009	71,37,188	66,881	72,69,330	81,890	2,212	40,010	1,24,112	16,154	182	5	89
Naushahro ...	Government ...	...	...	6,091	498	6,091	498	...	...	498				
	Purchasers ...	25,120	5,114	8,77,221	19,111	9,02,341	24,225	1,681	9,549	35,455				
	Free grants ...	2,208	220	...	...	2,208	220	11	536	767				
	Right holders ...	...	...	1,71,281	1,586	1,71,281	1,586	900	3,314	5,800				
	Total ...	27,328	5,334	10,54,593	21,195	10,81,921	26,529	2,592	13,399	42,520	4,345	107	10	54
Hyderabad ...	Government ...	...	119	...	2,266	...	2,385	51	...	2,436				
	Purchasers ...	1,17,095	28,577	64,56,843	34,398	65,73,938	62,975	18,823	17,072	98,870				
	Free grants ...	1,044	128	5,940	50	6,984	178	10	88	285				
	Right holders ...	...	...	...	...	...	...	...	...	...				
	Total ...	1,18,139	28,824	64,62,783	36,714	65,80,922	65,538	18,893	17,160	1,01,591	35,381	352	102	92
Jerruck ...	Government ...	20	36	26,293	722	26,313	758	33	...	791				
	Purchasers ...	89,770	8,148	30,97,249	23,233	31,87,019	31,381	3,149	13,166	47,696				
	Free grants ...	956	85	...	...	956	85	...	206	291				
	Right holders ...	...	...	...	...	...	...	...	2,161	2,161				
	Total ...	90,746	8,269	31,23,542	23,955	32,14,288	32,224	3,182	15,533	50,939	17,469	175	17	84
Total Sind Circle.	Government ...	1,643	679	78,203	4,105	79,846	4,784	282	...	5,066				
	Purchasers ...	3,55,775	55,374	1,75,21,534	1,42,992	1,78,77,309	1,98,366	25,610	58,470	2,82,446				
	Free grants ...	10,937	1,383	7,088	62	18,025	1,445	87	830	2,362				
	Right holders ...	...	...	1,71,281	1,586	1,71,281	1,586	900	26,802	29,288				
	Total ...	3,68,355	57,436	1,77,78,106	1,48,745	1,81,46,461	2,06,181	26,879	86,102	3,19,162	16,994	193	25	81

Summary of produce.

133. The different descriptions of produce removed from the forests are summarised below :—

Description of material.	Sukkur Division.	Naushahro Division.	Hyderabad Division.	Jerruck Division.	Total.
Timber ... ... C. ft.	1,32,142	27,328	1,18,139	90,746	3,68,355
Fire-wood and Charcoal ... ,,	71,37,188	10,54,593	64,62,783	31,23,542	1,77,78,106
Babul and other seed ... Mds.	1,078	...	738	651	2,467
Babul bark ... ... ,,	...	...	6	...	6
Lac ... ... ,,	...	...	3	...	3
Dab grass ... ... ,,	686	...	...	...	686
Tooth brushes ... ... ,,	...	...	206	83	289
Sar reed ... ... Bdls.	...	...	...	...	...
Kanh grass ... ... ,,	62	80	954	...	1,096
Thorns ... ... ,,	...	14,400	...	...	14,400
Jhau brush wood ... ,,	741	2,051	182	179	3,153
Branches of trees ... Ft.	55,720	497	...	...	56,217
Do. ... Cart loads.	201	...	...	...	201